

Title (en)  
Assisted drop-on-demand inkjet printer

Title (de)  
Tintenstrahldrucker mit gesteuerter und unterstützter Tropfenerzeugung

Title (fr)  
Imprimante assistée à éjection à la demande de gouttes d'encre

Publication  
**EP 1116586 A1 20010718 (EN)**

Application  
**EP 00204676 A 20001221**

Priority  
US 48130300 A 20000111

Abstract (en)  
A droplet generator is provided that is particularly adapted for generating micro droplets (23) of ink on demand in an inkjet printhead having a plurality of nozzles (7). The droplet generator includes a droplet separator (25) formed from the combination of a droplet assistor (30) and a droplet initiator (27). The droplet assistor is coupled to ink in each of the nozzles and functions to lower the amount of energy necessary for an ink droplet to form and separate from an ink meniscus extending across the nozzle outlet. The droplet assistor may be, for example, a heater (31, 66) or surfactant supply mechanism (40) for lowering the surface tension of the ink meniscus. Alternatively, the droplet assistor may be a mechanical oscillator such as a piezoelectric transducer that generates oscillations in the ink sufficient to periodically form convex ink menisci across the nozzle outlets, but insufficient to cause ink droplets to separate from the outlets. The droplet initiator cooperates with the droplet assistor and selectively causes an ink droplet to form and separate from the ink meniscus. The droplet initiator may be, for example, a thermally-actuated paddle (21). The droplet separator increases the speed and accuracy of ink micro droplets expelled from the printhead nozzles. <IMAGE>

IPC 1-7  
**B41J 2/005**

IPC 8 full level  
**B41J 2/045** (2006.01); **B41J 2/005** (2006.01); **B41J 2/055** (2006.01); **B41J 2/14** (2006.01)

CPC (source: EP US)  
**B41J 2/005** (2013.01 - EP US); **B41J 2/14** (2013.01 - EP US)

Citation (search report)  
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• [XA] WO 9014233 A1 19901129 - PA CONSULTING SERVICES [GB]  
• [XA] US 4751532 A 19880614 - FUJIMURA YOSHIHIKO [JP], et al  
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